



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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November 17, 2008

Mr. John Mundell  
Mundell & Associates  
110 South Downey Avenue  
Indianapolis, IN 46219

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Re: Remediation Work Plan Response to  
Comments and Addendum I Review  
Michigan Plaza  
3801-3823 West Michigan Street  
Indianapolis, Indiana  
VRP #6061202

Dear Mr. Mundell:

This office has completed review of the Remediation Work Plan (RWP) Response to Comments received September 25, 2008 and the Remediation Work Plan Addendum I received November 6, 2008 for the Michigan Plaza facility in Indianapolis, Indiana. The IDEM has the following comments.

Comments:

1. The report did not clearly define "shallow" and "deep" contamination. The recent groundwater grab samples were taken at four depths in the aquifer. Is the "shallow" contamination at the water table, or is it the top 10 feet of the water table? Which of the lower sample depths is considered "deep"? Are the corresponding "deep" wells also screened in this interval? Since there is contamination at all four depths in the grab samples, should additional samples be taken at all four depths? All of these questions must be answered in the final RWP.
2. Because of the high potential for these contaminants to sink in the water column even at low concentrations, IDEM cannot consider that all of the deep contamination within and down-gradient of Michigan Plaza's source areas is related to the Genuine Parts plume. However, based on the data available to date, it appears that some of the deep contamination on the Michigan Plaza and Floral Park properties is attributable to the Genuine Parts release. All deep contamination north of MW-1S and MW-11S on the Michigan Meadows Apartment property appears to be wholly related to the Genuine Parts plume. The extent of this contamination will not be apparent until quantitative and validated results are available from the proposed deep wells immediately up-gradient of the Michigan Plaza sewer releases.

3. Deep contamination from the sewer line releases and southward appears to be partially attributable to the Michigan Plaza release. This is based on the following lines of reasoning:
  - a. The mass of adsorbed contaminants detected along the sewer and in the parking lot is many times the groundwater solubility level (up to 26,000 ppb PCE), so the potential for DNAPL is very high.
  - b. TCE was initially detected in well MMW-P-10D but has not been detected in up-gradient wells MW-165D or MW-166D since monitoring was started in 2002.
  - c. 1,2-DCE levels in MMW-P-10D remain similar to pre-remedial levels, but vinyl chloride concentrations have increased two-fold.
  - d. Well MMW-P-03D contained PCE prior to remediation.
  - e. The large, unpaved areas south of the Michigan Plaza building allow shallow contaminants to sink quickly due to recharge.
  - f. Grab samples immediately down-gradient of MMW-P-03D (GP-C-06) contained moderate levels of shallow contamination and minimal deep contamination, but additional further down-gradient deep samples (GP-C-07 and 08) contained DCE and vinyl chloride above residential levels.
4. Four quarters of data have been submitted since the initial CAP 18 injections. As the contaminants biodegrade to DCE and vinyl chloride, they also become less amenable to reductive processes. Vinyl chloride, in particular, is often best remediated by oxidation. Since most of the plume has already degraded to less chlorinated VOCs, the consultant may wish to investigate manipulating the redox potential of the groundwater. Much additional information on bioremediation of chlorinated solvents is available from the Interstate Technology and Regulatory Commission (ITRC) at [www.itrcweb.org](http://www.itrcweb.org).
5. The consultant has proposed to reduce the list of chemicals of concern to those listed in Table 2. In addition to these analytes, ethene, 1,2-dichloroethane (1,2-DCA) and 1,1-dichloroethane (1,1-DCA) should be analyzed.
6. Response 2: The consultant has placed shallow wells south of the MMW-P-03 nest and intends to monitor annually down-gradient wells MMW-P 09S and 09D. Given the unusual distribution of deep contaminants in borings down-gradient of MMW-P-03D, IDEM recommends at least one additional deep well in the vicinity of MMW-C-09. Since, with four quarters of data available, it is clear that the CAP 18 remedy is having some effect on deep contaminants, the change in deep concentrations needs to be monitored within or near the one year travel time of the injections. Also, IDEM cannot support the reduction of monitoring until the full effects of the remedy are known.
7. Response 6: IDEM's concern regarding the source of the indoor air contamination was not directly answered by the referenced responses to this comment. The two referenced responses deal with the actions taken to abate indoor air vapors and the potential for further remediation and sampling. Please provide evidence within the text of the RWP that makes it clear that contaminated indoor air appears to be due to the shallow Michigan Plaza release rather than Genuine Parts.
8. Response 7: In the October 29, 2008 meeting, IDEM questioned why there was no additional soil sampling planned in source area C. The consultant explained that the contaminated area is narrow here and nearly the entire mass is located directly below the sewer line. Sampling this area directly would be very difficult. This explanation is acceptable. Contaminant levels from the other borings can serve as a general baseline to what is present in this area.
9. Response 8: The proposal to install two up-gradient deep wells rather than the three initially suggested by IDEM is generally acceptable. However, both wells are planned to

be at least 100 feet up-gradient of the known sources of shallow contamination. Deep wells should be within 20 feet of the known source areas.

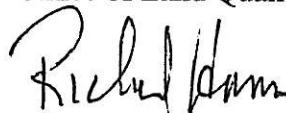
10. Response 11: While the installation of deep wells near the sewer line sources of the Michigan Plaza plume will assist in understanding the vertical and horizontal distribution of contamination, it is premature to declare them "background" wells without the supporting analytical data. The background/upgradient concentration will have to be explicitly defined. Accordingly, to achieve closure through the VRP, a site-specific risk assessment would need to be performed if contaminant levels are above RISC residential closure levels on the apartment property.
11. Please be advised that a sampling event south of Cossell Road or south of the Floral Park Cemetery property is necessary to fully delineate vinyl chloride in the groundwater. As of September 2008, the vinyl chloride in well MMW-P-09D was 72.6 ug/kg, which is above both the residential and industrial RISC closure levels. The extent of contamination needs to be defined to RISC residential default closure levels. The IDEM is willing to send correspondence to the Floral Park Cemetery property owner should you require assistance for off-site access.

Please respond to the above comments within 60 days from receipt of this letter. If you have any questions, please contact me at (317) 233-2991, (800) 451-6027, or at [ebrittai@idem.in.gov](mailto:ebrittai@idem.in.gov).

Sincerely,



Erin Brittain, Project Manager  
Voluntary Remediation Program  
Office of Land Quality



Richard Harris, Section Chief  
Voluntary Remediation Program  
Office of Land Quality

cc: Erin Brittain, VRP Project Manager

